

Permit Fact Sheet

General Information

Permit Number:	WI-0031348-10-1	
Permittee Name:	VILLAGE OF RIDGEWAY	
Address:	206 Kirby St	
City/State/Zip:	Ridgeway WI 53582	
Discharge Location:	NW ¼ of SE ¼, Section 14, T6N R4E (Lat: 42.99152° N / Lon: 89.98097° W)	
Receiving Water:	Smith-Conley Creek (Upper East Branch Pecatonica River Watershed, SP06 – Sugar-Pecatonica River Basin) in Iowa County	
Stream Flow (Q _{7,10}):	0.2 cfs	
Stream Classification:	Limited Forage Fish, non-public water supply	
Design Flow(s)	Daily Maximum	0.162 MGD
	Annual Average	0.045 MGD
Significant Industrial Loading?	None	
Operator at Proper Grade?	Facility is Basic with subclasses A1 – Suspended Growth Processes, B – Solids Separation, C – Biological Solids/Sludges, D – Disinfection, SS – Sanitary Sewage Collection System. Two operators are certified.	
Approved Pretreatment Program?	N/A	

Facility Description

The Village of Ridgeway operates a wastewater treatment facility that serves a population of approximately 690 residents with no major industrial contributors. In October 2019, the Village commissioned an Aero-MOD treatment facility equipped with a new mechanical fine screen, activated sludge treatment, chemical addition for phosphorus removal, and UV disinfection before discharge to Smith-Conley Creek. Wasted sludge is stored in a basin and will be dewatered with a filter bag as required. and land applied on Department approved sites.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)
701	N/A Not Reported	Representative influent samples shall be collected after the mechanical bar screen.
001	0.0322 MGD (August 2013 – August 2018 Average)	Representative composite samples shall be taken at the contact tank prior to the cascade steps and grab samples taken at the contact tank after the v notch weir, prior to discharge to Smith-Conley Creek.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)
003	51.8 Dry US Tons (2018 Permit Application)	Aerobically digested, Liquid, Class B. Representative sludge samples shall be collected from the sludge storage pond.

1 Influent - Proposed Monitoring

Sample Point Number: 701- INFLUENT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Continuous	Daily	
BOD ₅ , Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	3/Week	24-Hr Flow Prop Comp	

Changes from Previous Permit:

Influent flow monitoring has been added to the permit to measure flow on the influent rather than effluent.

Explanation of Limits and Monitoring Requirements

BOD₅ and Total Suspended Solids – Tracking of BOD₅ and Total Suspended Solids are required for percent removal requirements found in s. NR 210.05, Wis. Adm. Code and Standard Requirements section of the permit.

2 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
BOD ₅ , Total	Weekly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD ₅ , Total	Monthly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD ₅ , Total	Weekly Avg	9.4 lbs/day	3/Week	Calculated	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Suspended Solids, Total	Weekly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	9.4 lbs/day	3/Week	Calculated	
pH Field	Daily Max	9.0 su	3/Week	Grab	
pH Field	Daily Min	6.0 su	3/Week	Grab	
Dissolved Oxygen	Daily Min	6.0 mg/L	Daily	Grab	
Nitrogen, Ammonia Variable Limit		mg/L	3/Week	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	3/Week	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	October through April
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	7.5 mg/L	3/Week	24-Hr Flow Prop Comp	May through September
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	7.2 mg/L	3/Week	24-Hr Flow Prop Comp	October through April
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.9 mg/L	3/Week	24-Hr Flow Prop Comp	May through September
Fecal Coliform	Geometric Mean - Wkly	656 #/100 ml	Weekly	Grab	May through September
Fecal Coliform	Geometric Mean - Monthly	400 #/100 ml	Weekly	Grab	May through September
Temperature Maximum		deg F	Daily	Continuous	Jan. 1, 2022 - Dec. 31, 2022. Monitor Only.
Phosphorus, Total	Monthly Avg	5.0 mg/L	3/Week	24-Hr Flow Prop Comp	This is an interim limit, effective through December 31, 2022.
Phosphorus, Total	Monthly Avg	1.0 mg/L	3/Week	24-Hr Flow Prop Comp	This is an interim MDV limit effective on January 1, 2023. See the MDV/Phosphorus subsections and phosphorus schedules.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Phosphorus, Total		lbs/month	Monthly	Calculated	Report the total monthly phosphorus discharged in lbs/month on the last day of the month on the DMR. See Standard Requirements for 'Appropriate Formulas' to calculate the Total Monthly Discharge in lbs/month.
Phosphorus, Total		lbs/yr	Annual	Calculated	Report the sum of the total monthly discharges (for the months that the MDV is in effect) for the calendar year on the Annual report form.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET sections below for explanation
Chronic WET	Monthly Avg	1.4 TUC	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET sections below for explanation
Chloride		mg/L	3/Week	24-Hr Flow Prop Comp	Monitoring to collect 11 samples in the fourth year of the permit term. Samples shall be performed no less than 3 days apart.

Changes from Previous Permit

Effluent flow monitoring has been removed. Total Residual Chlorine monitoring and limits are no longer required since disinfection is performed with UV light rather than chlorine.

Phosphorus MDV - The permittee has applied for a multi-discharger variance (MDV) for phosphorus for this permit term and the application has been approved by the Department. An MDV interim limit of 1.0 mg/L has been added that goes into effect per a compliance schedule. The permittee is now required to report the total amount of phosphorus discharged in lbs/month and lbs/year. By March 1 of each year the permittee shall make a payment(s) to participating county(s) of \$52.02 per pound of phosphorus discharged during the previous year in excess of the target value of 0.2 mg/L.

Explanation of Limits and Monitoring Requirements

Please refer to the Water Quality Based Effluent Limits memo dated --- prepared by Shaun Shields for the detailed calculations and explanation.

Note: Throughout this fact sheet all citations of administrative code for example, s. NR 102.06, Wis. Adm. Code, will be referenced as s. NR 102.06, and reflect current Wisconsin Administrative Code.

Categorical Limits

BOD₅, Total Suspended Solids (TSS), pH, Dissolved Oxygen (DO), and Fecal Coliform

Standard municipal wastewater requirements for BOD₅, TSS, pH, DO, and Fecal Coliforms are included based on ch. NR 210 requirements for discharges to fish and aquatic life streams. Ch. NR 102 'Water Quality Standards for Surface Waters' also specifies requirements for pH for fish and aquatic life streams.

Regulatory changes to s. NR 205.065, became effective September 1, 2016 and require limits in this permit to be expressed as weekly average and monthly average limits whenever practicable. These changes are based on 40 CFR 122.45(d). Minor changes have been made to fecal coliform limitations from the previous permit in order to comply with this regulation.

Water Quality Based Limits and WET Requirements and Disinfection (if applicable)

Phosphorus – Phosphorus rules became effective December 1, 2010 per NR 217, Wis. Adm. Code, that required the permittee to comply with water quality based effluent limits (WQBELs) for total phosphorous. The final phosphorus WQBELs are 0.23 mg/L as a monthly average and 0.075 mg/L (0.047 lbs/day) as a six-month average and were to become effective as scheduled unless a variance was granted. For this permit term, the permittee has applied for the Multi-Discharger Variance (MDV) for phosphorus as provided for in s. 283.16, Wis. Stats., and approved by USEPA on February 6, 2017 until February 5, 2027. The permittee qualifies for the MDV because it is an existing source and a major facility upgrade is needed to comply with the applicable phosphorus WQBELs, thereby creating a financial burden.

Conditions of the MDV require the permittee to optimize phosphorus removal throughout the proposed permit term, comply with interim limits and make annual payments to participating county(s) by March 1 of each year based on the pounds of phosphorus discharged during the previous year in excess of the specified target value. The "price per pound" value is \$50.00 adjusted for CPI annually during the first quarter as defined by s. 283.16(8)(a)2, Wis. Stats and takes effect for reissued permits with effective dates starting April 1. This may differ from the "price per pound" that is public noticed; however, the "price per pound" is set upon reissuance and is applicable for the entire permit term. The participating county(s) uses these payments to implement non-point source (agricultural and urban) phosphorus control strategies at the watershed level.

Ammonia – Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for ammonia.

Chloride – Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105, Wis. Adm. Code. Subchapter VII of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for chloride. If the permittee's effluent data shows that a calculated WQBEL for chloride cannot be met, then the permit will include a chloride effluent limitation. s. NR 106.83 of subchapter VII also provides for some permittees to obtain temporary relief from a chloride WQBEL through the use of a "chloride variance".

Thermal – Requirements for Temperature are included in NR 102 Subchapter II Water Quality Standards for Temperature and NR 106 Subchapter V Effluent Limitations for Temperature. Thermal discharges must meet the Public Health criterion of 120 degrees F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from lethal and sub-lethal thermal effects.

Whole Effluent Toxicity – Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09 Wis. Adm. Code, as revised August 2016.

3 Land Application - Proposed Monitoring and Limitations

Municipal Sludge Description						
Sample Point	Sludge Class (A or B)	Sludge Type (Liquid or Cake)	Pathogen Reduction Method	Vector Attraction Method	Reuse Option	Amount Reused/Disposed (Dry Tons/Year)
003	B	Liquid	Fecal Coliform	Injection	Land Application	51.8
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? Yes						
If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						
Is a priority pollutant scan required? No , design flow is less than 5 MGD (0.075 MGD).						
Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

Sample Point Number: 003- SLUDGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Jan. 1, 2020 – Dec. 31, 2020
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Jan. 1, 2020 – Dec. 31, 2020
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	

Changes from Previous Permit:

New time frame for monitoring PCBs is now calendar year 2020.

Explanation of Limits and Monitoring Requirements

Requirements for land application of municipal sludge are determined in accordance with ch. NR 204 Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5). Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7) for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k). Radium requirements are addressed in s. NR 204.07(3)(n).

WATER EXTRACTABLE PHOSPHORUS – Water extractable phosphorus (WEP) is the coefficient for determining plant available phosphorus from measured total phosphorus. In Wisconsin, the Penn State Method is utilized and is expressed in percent. While a total P may be significant, the WEP may show that only a small percentage of the P is available to plants because of factors such as treatment processes and chemical addition that “tie-up” phosphorus limiting the amount of phosphorus that is plant available. As part of the Wisconsin’s nutrient management plan (NMP) requirements, the accounting of all fertilizers must be included over the NMP cycle. The fertilizer value of the waste needs to be communicated to the farmer and accounted for in the NMP.

4 Schedules

4.1 Phosphorus Schedule - Continued Optimization

The permittee is required to optimize performance to control phosphorus discharges per the following schedule.

Required Action	Due Date
Optimization: The permittee shall continue to implement the optimization plan as previously approved to optimize performance to control phosphorus discharges. Submit a progress report on optimizing removal of phosphorus by the Due Date.	01/01/2020
Progress Report #2: Submit a progress report on optimizing removal of phosphorus.	01/01/2021
Progress Report #3: Submit a progress report on optimizing removal of phosphorus.	01/01/2022
Progress Report #4: Submit a progress report on optimizing removal of phosphorus.	01/01/2023

4.1.1 Explanation of Phosphorus Schedule – Continued Optimization

Per s. 283.16(6)(a), Wis. Stats. the Department may include a requirement that the permittee optimize the performance of a point source in controlling phosphorus discharges, which may be necessary to achieve compliance with multi-discharger variance interim limits. This compliance schedule requires the permittee to continue to implement the optimization plan that was approved during the previous permit term.

4.2 Phosphorus Multi-Discharger Variance Interim Limit (1.0 mg/L)

The permittee shall comply with the 1.0 mg/L MDV interim effluent limit by the end of this compliance schedule.

Required Action	Due Date
Submit Final Compliance Plan: The permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code. The permittee may submit an abbreviated facility plan if the modifications are determined to be minor according to the Department.	06/30/2019
Submit Plans & Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Wis. Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with the interim phosphorus effluent limit and a schedule for completing construction of the upgrades by the 'Complete Construction' date specified below.	01/01/2020
Treatment Plant Upgrade: Upon approval of the final construction plans and schedule by the Department and pursuant to s. 281.41, Wis. Stats., the permittee shall initiate construction of the treatment plant upgrades in accordance with the approved plans and specifications.	01/01/2021
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	01/01/2022
Complete Construction and Achieve Compliance: The permittee shall complete construction and achieve compliance with the phosphorus interim effluent limit of 1.0 mg/L.	01/01/2023

4.2.1 Explanation of Phosphorus Multi-Discharger Variance Interim Limit (1.0 mg/L)

Subsection 283.16(6), Wis. Stats., establishes required interim phosphorus effluent limits that must be met for multi-discharger variance (MDV) eligibility. Subsection 283.16(6) (am), Wis. Stats., allows a technology-based phosphorus limit of 1.0 mg/L as the MDV interim limit if a permittee certifies that its treatment facility cannot achieve compliance with the MDV interim limit without a major facility upgrade. The permittee qualifies for a 1.0 mg/L total phosphorus MDV interim limit and the schedule above provides the permittee with four years to comply with that limit.

4.3 Phosphorus Payment per Pound to County

The permittee is required to make annual payments for phosphorus reductions to the participating county or counties in accordance with s. 283.16(8), Wis. Stats, and the following schedule. The price per pound will be set at the time of permit reissuance and will apply for the duration of the permit.

Required Action	Due Date
<p>Annual Verification of Phosphorus Payment to County: The permittee shall make a total payment to the participating county or counties approved by the Department by March 1 of each calendar year. The amount due is equal to the following: [(lbs of phosphorus discharged minus the permittee's target value) times \$52.02 per pound)] or \$640,000, whichever is less. See the payment calculation steps in the Surface Water section.</p> <p>The permittee shall submit Form 3200-151 to the Department by March 1 of each calendar year indicating total amount remitted to the participating counties to verify that the correct payment was made. The first payment verification form is due by the specified Due Date.</p> <p>Note: The applicable Target Value is 0.2 mg/L as defined by s. 283.16(1)(h), Wis. Stats. The "per pound" value is \$50.00 adjusted for CPI.</p>	03/01/2019
Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2020
Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2021
Annual Verification of Payment #4: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2022
Annual Verification of Payment #5: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2023
Continued Coverage: If the permittee intends to seek a renewed variance, an application for the MDV (Multi Discharger Variance) shall be submitted as part of the application for permit reissuance in accordance with s. 283.16(4)(b), Wis. Stats.	
Annual Verification of Payment After Permit Expiration: In the event that this permit is not reissued prior to the expiration date, the permittee shall continue to submit Form 3200-151 to the Department indicating total amount remitted to the participating counties by March 1 each year.	

4.3.1 Explanation of Phosphorus Payment per Pound to County

Subsection 283.16(6)(b), Wis. Stats., requires permittees that have received approval for the multi-discharger variance (MDV) to implement a watershed project that is designed to reduce non-point sources of phosphorus within the HUC 8 watershed in which the permittee is located. The permittee has selected the "Payment to Counties" watershed option described in s. 283.16(8), Wis. Stats. Under this option the permittee shall make annual payment(s) to participating county(s) that are calculated based on the amount of phosphorus actually discharged during a calendar year in pounds per year less the amount of phosphorus that would have been discharged had the permittee discharged phosphorus at a target value concentration of 0.2 mg/L. The pounds of phosphorus discharged in excess of the target value is multiplied by a per pound phosphorus charge that will equal \$51.10 per pound. This schedule requires the permittee to submit Form 3200-151 to the Department indicating the total amount remitted to the participating county(s).

Attachments:

Substantial Compliance Determination

Map(s)

Water Quality Based Effluent Limits

Public Notice

Proposed Expiration Date:

A permit term of five years is proposed in this permit term with an expiration date of December 31, 2023.

Justification of Any Waivers from Permit Application Requirements

No waivers were requested in the permit application.

Prepared By:

Sean Spencer – Wastewater Specialist

Date: 09/08/2020

cc: Nathan Wells